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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/928,566 | 08/13/2001 | Yukihiro Matsukawa | 1692-011111 | 7158 |
| 28289 | 7590 | 11/07/2005 | EXAMINER | |
| THE WEBB LAW FIRM, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219 | | | HANSEN, COLBY M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3682 | |

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|--------------------------|-------------------------------|-------------------------------------|--|
| Interview Summary | Application No. 09/928,566 | Applicant(s) MATSUKAWA, YUKIHIRO | |
| | Examiner Colby Hansen | Art Unit 3682 | |

All participants (applicant, applicant's representative, PTO personnel):

(1) Colby Hansen. (3) _____.

(2) John W. McIlvaine. (4) _____.

Date of Interview: 01 November 2005.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.
If Yes, brief description: _____.

Claim(s) discussed: 1.

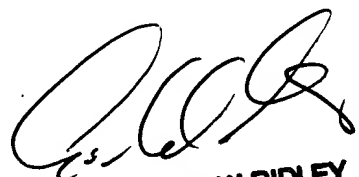
Identification of prior art discussed: _____.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

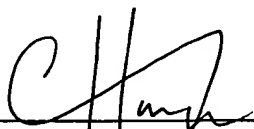
Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Discussed possible amendments that further clarify the functionality of the invention as well as arguments against the combination of the prior arts of record that may overcome the rejection of 8/24/2005, though require further consideration by the Examiner (proposed amendment and arguments attached).

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.


RICHARD W. RIDLEY
~~EXAMINER~~
 SPE Art 3682

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

 11/05
 Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent and Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file; and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Response under 37 CFR 1.116
Expedited Procedure
Examining Group 3600
Application No. 09/928,566
Paper Dated November 1, 2005
In Reply to USPTO Correspondence of August 24, 2005
Attorney Docket No. 1692-011111

Listing of Claims

1. (Currently Amended) In aA dividing head using a multiple lead type worm, comprising with a circular table attached to a worm wheel shaft, said worm wheel shaft having at least one worm wheel assembled thereon, wherein the worm may be moved in an axial direction to adjust a backlash between the worm and the worm wheel, the improvement comprising;

~~a circular table attached to a worm wheel shaft, said worm wheel shaft having at least one worm wheel assembled thereon;~~

a hollow worm body having multiple lead type worm teeth formed such that the thickness dimension of each tooth gradually increases toward one end of said worm body along the direction of the rotation axis of said worm body;

a drive shaft fitted into a hollow portion of said worm body and supported by a thrust bearing on a frame, said worm body being able to rotate relative to said drive shaft and able to move in the axial direction of said drive shaft; and

an assembler having an annular portion which is coaxial with said drive shaft, wherein said annular portion may be displaced radially to press said worm body and said drive shaft to couple both by frictional engagement,

~~wherein rotation of said drive shaft rotates said worm body, thereby rotating said worm wheel and said circular table, thereby carrying out an angular positioning of the circular table.~~

whereby after said assembler is operated to uncouple said worm body and the shaft, to adjust said backlash, the worm body may be recoupled to said shaft without further relative movement between the worm body and the shaft.

Response under 37 CFR 1.116**Expedited Procedure****Examining Group 3600**

Application No. 09/928,566

Paper Dated November 1, 2005

In Reply to USPTO Correspondence of August 24, 2005

Attorney Docket No. 1692-011111

2. (Currently Amended) The ~~dividing head as claimed in~~improvement of claim 1, wherein said assembler includes a cylinder which forms said annular portion, the cylinder being disposed between said worm body and said drive shaft, having a fluid reservoir in an interior of the cylinder, and being expandable with the outer periphery and the inner periphery of said cylinder displaced outwardly and inwardly in the radial direction by the pressure of the reservoired fluid; a flange integrally following one end of said cylinder and having a screw hole connected to said reservoir; and a screw member screwable into said screw hole; and wherein said worm body has a fitting hole for receiving said cylinder, the fitting hole having a larger diameter than that of said drive shaft in an axial position corresponding to said worm teeth.

3. (Withdrawn) The dividing head as claimed in claim 1, wherein said worm body has an elastically deformable sleeve at one end, wherein said assembler has a first ring fitted on the outside of said sleeve, a second ring fitted on the outer periphery of said first ring on the worm teeth side, a third ring fitted on the outer periphery of said first ring on the opposite side to the worm teeth, and a plurality of screw members screwed into said second ring, penetrating said third ring, and wherein said first, second and third rings displace said sleeve in its axial direction according to the amount of screwing of said screw member into said second ring.

4. (Withdrawn) The dividing head as claimed in claim 3, wherein said first ring has an outer periphery having a section shaped like a mountain by two truncated conical faces, wherein said second ring has an inner periphery with a truncated conical shape

Response under 37 CFR 1.116**Expedited Procedure****Examining Group 3600**

Application No. 09/928,566

Paper Dated November 1, 2005

In Reply to USPTO Correspondence of August 24, 2005

Attorney Docket No. 1692-011111

corresponding to one of said truncated conical faces, the inner periphery of the second ring being fitted to one of said truncated conical faces, and wherein said third ring has an inner periphery with a truncated conical shape corresponding to the other of said truncated conical faces of said first ring, the inner periphery of the third ring being fitted to the other of said truncated conical faces.

5. (Currently Amended) The dividing head as claimed in improvement of claim 1, wherein said dividing head is a multishaft dividing head comprising plural sets of worm bodies and said assemblers, and wherein at least two sets of said worm bodies are assembled into said drive shaft in common.

Response under 37 CFR 1.116

Expedited Procedure

Examining Group 3600

Application No. 09/928,566

Paper Dated November 1, 2005

In Reply to USPTO Correspondence of August 24, 2005

Attorney Docket No. 1692-011111

REMARKS

Claims 1, 2 and 5 are pending in the instant application. Claims 1, 2 and 5, however, remain rejected Under 35 U.S.C. § 103(a) as obvious over Japanese Patent No. 2-14921 ("JP '921") in view of German Patent No. 743530 ("DE '530"), or Falk and further in view of Japanese Patent No. 411020723 A ("JP '723").

Applicant has requested a telephone interview with the Examiner. In advance of said interview, however, Applicant submits the following remarks.

To support the above combination of references, the Examiner expresses the "problem" to be solved by the instant invention as seeking to non-rotatably fix a body to a rotating shaft and then allow uncoupling of said components. (See p. 7, first full paragraph of the outstanding Office Action.) Applicant respectfully submits that this is a mischaracterization of the problem to be solved by the instant invention. Particularly, the instant application clearly states that the problem being addressed by the inventor was to make it easier to adjust backlash between a worm and a worm wheel in a dividing head using a multiple lead type worm. (See instant Specification, p. 2, 3rd Para.) The Examiner, to support the proposed combination of the non-analogous Falk and DE '530 references, has attempted to redefine the inventor's problem in terms of its solution. Neither Falk nor DE '530 has anything remotely to do with adjusting backlash in a dividing head using a multiple lead type worm. The Federal Circuit has said that this type of redefinition of the problem, to support obviousness, is improper. See *Monarch Knitting Machinery Corp. v. Sulzer Morat GmbH*, 139 F. 3d 877, 882, 45 U.S.P.Q. 2d 1977 (Fed. Cir 1998).

This case is not unlike *In re Oetiker*, 977 F. 2d 1443 (Fed. Cir 1992), (discussed at MPEP § 2141.01(a) (IV)). There, the examiner had cited a fastener for a garment, against a claimed fastener for a hose clamp. The Commissioner had argued that a disengageable catch was a common mechanical concept. But the Court held that the cited reference was not in the field of the applicant's endeavor, and someone attempting to solve the problem of fastening a hose clamp would not be expected to look to fasteners for garments.

Response under 37 CFR 1.116
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Applicant has further amended the instant claims to highlight the problem being solved by the instant invention. Particularly, the claims are now in Jepson format, and the preamble, as well as the last paragraph in the body of the claim, sets forth that the invention is directed to the problem of facilitating the adjustment of backlash in a dividing head using a multiple lead type worm.

While it is in relation to worm gears, the JP '723 reference teaches away from the instant invention, by showing the worm gear integrally forged with the shaft, rather than separate as in the instant invention. Furthermore, like DE '530 and Falk, JP '723 is not directed at all to the problem of adjusting backlash in dividing heads using a multiple lead type worm. JP '723 is thus not properly combined with JP '921, Falk or DE '560 as a basis for an obviousness rejection of the invention as now specifically claimed.

In light of the above amendments and remarks, claim 1 (and dependent claims 2 and 5) are now deemed allowable.

Respectfully submitted,

THE WEBB LAW FIRM

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